REMARKS/ARGUMENTS

The claims are 3-21. Reconsideration is expressly requested.

In the April 12, 2010 Final Office Action, claim 13 was objected to as reciting "the wire" in lines 2 and 3 instead of -- the welding wire --. In response, Applicant filed an Amendment After Final on July 12, 2010 amending claim 13 to improve its form. In the August 5, 2010 Advisory Action, the Examiner indicated that the amendment to claim 13 had been entered, which it is respectfully submitted overcomes the Examiner's objection on the basis of this informality.

Also in the April 12, 2010 Final Office Action, claims 4-7 and 9-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Steele U.S. Patent No. 2,906,859* in view of *Ogilvie et al. U.S. Patent No. 4,758,707*.

Essentially the Examiner's position was (1) that *Steele* discloses the claimed method, except for the welding parameters being controlled in a manner that no or only little welding wire material melting is effected and except for the base current phase condition set forth in claim 14, (2) that the melting

controlling condition and the base current phase condition are well known in the art as shown by *Ogilvie et al.*, and (3) that it would have been obvious to one of ordinary skill in the art to perform the method of *Steele* under the conditions of *Ogilvie et al.* of controlling melting and using a base current phase.

Applicant's July 12, 2010 Amendment After Final traversed this rejection and presented arguments distinguishing the prior art. In the August 5, 2010 Advisory Action, the Examiner indicated that the July 12, 2010 Amendment After Final failed to place the application in condition for allowance because although the arguments set forth in the Amendment After Final were well taken, "one cannot show nonobviousness by attacking the references individually where the rejection is based on combinations of references." (citations omitted).

This rejection is respectfully traversed and reconsideration is expressly requested.

As set forth in claim 21, Applicant's invention provides a method for controlling a welding process using a melting welding wire and a welding torch wherein at least one mechanical adjustment process is carried out during the welding to determine the position of the welding wire using the welding wire as a

sensor. During the at least one mechanical adjustment process, the welding torch is maintained in position and the welding parameters are controlled in a manner that no or only little welding wire material melting is effected and contacting of the welding wire with a workpiece is effected by moving the welding wire towards the workpiece. After contacting of the welding wire with the workpiece, the welding wire is moved away from the workpiece to a fixedly pre-given or adjustable distance relative to the workpiece.

The primary reference to *Steele* discloses a method and an apparatus for electric arc welding using a non-melting electrode 12. As described in *Steele*, the electrode 12 is tightly gripped in the electrode holder 13 which in turn is raised and lowered by appropriate gears such as the rack 14 and the engaging pinion 16 which acts to raise and lower the entire electrode holder and thus the electrode 12 with respect to the work. See column 3, lines 13-19 of *Steele*. FIG. 2 of *Steele* shows another embodiment with a consuming wire electrode 12' whereby an adjustment of the distance of the electrode's tip and the workpiece is done with a worm-wheel 18 and a shaft 17.

The arc length or the length between the tip of the electrode 12, 12' and the workpiece is adjusted via the arc

voltage as described in column 5, lines 22-53 of *Steele*. The passage in column 8, lines 26-64 of *Steele* describes an ignition method whereby the electrode 12 touches the workpiece and is retracted when energizing an arc starter solenoid 31 to establish an arc gap. It is respectfully submitted that *Steele* fails to disclose or suggest a mechanical adjustment process which is carried out during a welding process whereby the welding wire is moved forward to the workpiece until contacting of the welding wire with the workpiece is effected, whereby the welding parameters are controlled in a manner that with no or only little welding wire material melting is effected, wherein after the contact of the welding wire with the workpiece, the welding wire is moved away from the workpiece to a fixedly pre-given distance relative to the workpiece, and wherein after the mechanical adjustment process the normal welding process is continued.

It is respectfully submitted that *Steele* fails to disclose or suggest a mechanical adjustment process as recited in Applicant's claim 21 and fails to disclose or suggest the moving of a welding wire back from the workpiece to a fixedly pre-given distance relative to the workpiece. The welding apparatus according to *Steele* enables the movement of the welding wire only in the direction towards the workpiece and not back during the normal welding process (with the exception of the ignition of the

welding arc). In contrast, the mechanical adjustment process as set forth in Applicant's claim 21 differs from the contact ignition method as described in *Steele*. The mechanical adjustment process as recited in Applicant's claim 21 is carried out during the welding process, for instance between two pulse current phases 35 during pulse welding, as can be seen in FIGS. 2-5 of Applicant's disclosure. The mechanical adjustment process 41 is performed in the base current phase 35, whereby it is ensured that no droplet 38 will form on the end of the welding wire 13 and hence no or only little melting of material or material transfer onto the workpiece 16 will occur. The method according to Applicant's claim 21 enables the control of the length of the arc during the welding process.

The defects and deficiencies of the primary reference to *Steele* are nowhere remedied by the secondary reference to *Ogilvie et al.*, which simply describes a pulsed arc welding method without mentioning a mechanical adjustment process as recited in Applicant's claim 21.

Thus, even if one skilled in the art were to make the hypothetical combination of *Steele* and *Ogilvie et al.* as suggested, he or she still would not achieve a method for controlling a welding process using a melting welding wire and a

welding torch as recited in Applicant's claim 21 because neither *Steele* nor *Ogilvie et al.* discloses or suggests a mechanical adjustment process carried out during a welding process whereby the welding wire is moved forward to the workpiece until contacting of the welding wire with the workpiece is effected and the welding parameters are controlled in a manner that no or only little welding wire material melting is effected. No mechanical adjustment process is disclosed in *Ogilvie et al.* and the electrode 12 touches the workpiece and is retracted in *Steele* only during ignition of the welding arc, not during a welding process as specified in Applicant's claims, for example, during a base current phase of the welding as more specifically recited in Applicant's claim 14.

Moreover, it is respectfully submitted that one skilled in the art would have no reason to modify *Steele's* ignition method so that it occurs during welding because if the electric arc has already been ignited, there would be no reason to energize *Steele's* arc starter solenoid 13 to establish an arc gap. There is also nothing in *Ogilvie et al.* that discloses or suggests that the detecting of the arc voltage should be accomplished using a mechanical adjustment process.

Accordingly, it is respectfully submitted that claim 21, together with claims 4-7 and 9-20 which depend directly or indirectly thereon, are patentable over the cited references.

In view of the foregoing, it is respectfully requested that the claims be allowed and that this application be passed to issue.

Respectfully submitted,
Josef ARTELSMAIR

Frederick J. Dorchak, Reg. No.29,298
Attorneys for Applicant

COLLARD & ROE, P.C.
1077 Northern Boulevard
Roslyn, New York 11576
(516) 365-9802

FJD:cmp

EXPRESS MAIL NO. EM 393 397 276 US
Date of Deposit: August 12, 2010

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10, on the date indicated above, and is addressed to Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Kelly Espitia

Kelly Espitia

R:\Patents\A\ARTELSMAIR 5 PCT\RCE-2\Preliminary Response in RCE-2.wpd